EXHIBIT
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Smith Economics Group, Ltd.

A Division of Corporate Financial Group

Economics / Finance / Litigation Support

Stan V. Smith, Ph.D.
President

September 3, 2019

Mr. John M. Eubanks
Motley Rice
28 Bridgeside Blvd.
Mt. Pleasant, SC   29464

    Re: Houtz

Dear Mr. Eubanks:

You have asked me to calculate the value of certain losses
subsequent to the death of Angela Houtz. These losses are: (1)
the loss of wages and employee benefits; (2) the loss of
housekeeping and household management services; and (3) the loss
of the value of life ("LVL"), also known as loss of enjoyment of
life.

QUALIFICATIONS AND EXPERIENCE

I am President of Smith Economics Group, Ltd., headquartered in
Chicago, IL, which provides economic and financial consulting
nationwide. I have worked as an economic and financial
consultant since 1974, after completing a Research Internship at
the Federal Reserve, Board of Governors, in Washington, D.C. My
curriculum vitae lists all my publications in the last 10 years
and beyond.

I received my Bachelor's Degree from Cornell University. I
received a Master's Degree and my Ph.D. in Economics from the
University of Chicago; Gary S. Becker, Nobel Laureate 1992, was
my Ph.D. thesis advisor. The University of Chicago is one of the
world's preeminent institutions for the study of economics, and
the home of renowned research in the law and economics movement.

As President of Smith Economics, I have performed economic
analyses in a great variety of engagements, including damages
analysis in personal injury and wrongful death cases, business
valuation, financial analysis, antitrust, contract losses, a wide
range of class action matters, employment discrimination,
defamation, and intellectual property valuations including
evaluations of reasonable royalty.

I have more than 40 years of experience in the field of
economics. I am a member of various economic associations and
served for three years as Vice President of the National

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Association of Forensic Economics (NAFE) which is the principal association in the field. I was also on the Board of Editors of the peer-reviewed journal, the Journal of Forensic Economics, for over a decade; I have also published scholarly articles in this journal. The JFE is the leading academic journal in the field of Forensic Economics.

I am the creator and founder of Ibbotson Associates' Stock, Bonds, Bills, and Inflation (SBBI) Yearbook, Quarterly, Monthly, and SBBI/PC Services. SBBI is currently published by Duff & Phelps and is also available on various Morningstar, Inc. software platforms. SBBI is widely relied upon and regarded as the most accepted and scholarly reference by the academic, actuarial and investment community, and in courts of law. The SBBI series, which acknowledges my "invaluable role" as having "originated the idea" while Managing Director at Ibbotson Associates, is generally regarded by academics in the field of finance as the most widely accepted source of statistics on the rates of return on investment securities.

I wrote the first textbook on Forensic Economic Damages that has been used in university courses in various states; as an adjunct professor, I created and taught the first course in Forensic Economics nationwide, at DePaul University in Chicago. I have performed economic analysis in many thousands of cases in almost every state since the early 1980s.

BACKGROUND

Angela Houtz was a 27.0-year-old, Caucasian, single female, who was born on █████████████████, and died on September 11, 2001. Ms. Houtz's remaining life expectancy is estimated at 55.1 years. This data is from the National Center for Health Statistics, United States Life Tables, 2017, Vol. 68, No. 7, National Vital Statistics Reports, 2019. I assume an estimated trial or resolution date of January 1, 2020.

In order to perform this evaluation, I have reviewed the following materials: (1) federal and state tax returns and W-2s from 1998 through 2000; (2) employment and records from the Office of Personnel Management; (3) an interview with Julia Shontere on August 30, 2019; (4) a biography from The National 9/11 Pentagon Memorial; and (5) the case information form.

My methodology for estimating the losses, which is explained below, is generally based on past wage growth, interest rates, and consumer prices, as well as studies regarding the value of life. The effective net discount rate using statistically average wage growth rates and statistically average discount rates is 0.25 percent.

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My estimate of the real wage growth rate is 1.00 percent per year. This growth rate is based on Business Sector, Hourly Compensation growth data from the Major Sector Productivity and Costs Index found at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: PRS84006103, for the real increase in wages primarily for the last 20 years.

My estimate of the real discount rate is 1.25 percent per year. This discount rate is based on primarily the rate of return on short-term U.S. Treasury investment for the last 20 years. The data is from the statistical series H.15 Selected Interest Rates, published by the Board of Governors of the Federal Reserve System found at www.federalreserve.gov. This data is also published in the Economic Report of the President Table for "Bond yields and interest rates" for the real return on U.S. Treasury investments.

Estimates of real growth and discount rates are net of inflation based on the Consumer Price Index (CPI-U), published in monthly issues of the U.S. Bureau of Labor Statistics, CPI Detailed Report (Washington, D.C.: U.S. Government Printing Office) and available at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: CUUR0000SA0. The rate of inflation for the past 20 years has been 2.16 percent.

I. LOSS OF WAGES AND EMPLOYEE BENEFITS - Annual Employment

Tables 1 through 9 show the loss of wages and benefits. Ms. Houtz was an intelligence analyst for the Office of Naval Intelligence at the time of her death. Ms. Houtz was a civilian employee working in the Pentagon at the time of her death. She started working at the Office of Naval Intelligence as an intern while attending the University of Maryland, Baltimore County, where she was on a full scholarship. They were so impressed with Ms. Houtz that she was able to obtain a full-time position following her graduation in 1996. Ms. Houtz worked as a regional analyst, specializing in Latin American affairs. She was recommended for a position in the Pentagon working for the Chief Naval Operations Intelligence Plot, where she also served as the Naval Intelligence Watch Officer in the Navy Command Center. Following this assignment, she returned to work at the Office of Naval Intelligence until her recent appointment as Senior Analyst at the Pentagon.

Ms. Houtz's mother, Julia Shontere, states that her daughter worked under the Director of Naval Intelligence and her mentor was the Assistant Director of Naval Intelligence. Ms. Shontere states that her daughter was the youngest female to be appointed to her position. Her daughter wanted to continue her education and obtain a Master's degree. Her daughter had enrolled in the Naval War College and started a graduate program shortly prior to her death, and she was awarded an honorary degree posthumously.

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Ms. Shontere states that her daughter planned to continue her career in naval intelligence and she would have continued to move up the ranks.

Ms. Houtz was at GS 12, step 1 earning $53,156 at the time of her death, and she received three promotions in the 5 years she worked for the Office of Naval Intelligence. Based on Ms. Houtz's employment records, she was hired in 1996 as a GS 7 around September 1996 and receive a promotion to GS 9 in September 1997, to GS 11 in August 1999 and to GS 12 in November 2000.

Ms. Houtz received three promotions in five years prior to her death. I assume she would have obtained an additional three promotions, and I conservatively assume she would be promoted to GS 13 after 3 years as GS 12, which is in 2004, to GS 14 after another 5 years, which is in 2009, and to GS 15 after another 7 years, which is in 2016. Based on the step increase information obtained from Office of Personnel Management found at www.opm.gov, I assume step increases of one year for steps 1 through 3, two years for steps 4 through 6, and three years for steps 7 through 10. Based on the "Fact Sheet: Promotions", promotions are assumed to follow the two-step promotion rule, which says that the promotion pay is the lowest rate in the new pay grade that exceeds the rate of pay that is two step increases from the grade and step at time of promotion. Based on this rule, Ms. Houtz would be promoted to GS 13, step 1 in 2004, GS 14, step 1 in 2009; and GS 15, step 2 in 2016.

Based on the above assumptions and the GS pay schedules for Washington-Baltimore, DC-MD-VA-WV found at www.opm.gov, the wage estimate is illustrated at $53,156 for GS 12, step 1 in 2001, $57,550 for GS 12, step 2 in 2002, $61,942 for GS 12, step 3 in 2003, $72,108 for GS 13, step 1 in 2004, $77,274 for GS 13, step 2 in 2005, $82,509 for GS 13, step 3 in 2006, $87,338 for GS 13, step 4 in 2007, $91,259 for GS 13, step 4 in 2008, $102,721 for GS 14, step 1 in 2009, $108,717 for GS 14, step 2 in 2010, $112,224 for GS 14, step 3 in 2011, $115,731 for GS 14, step 4 in 2012 and 2013, $120,429 for GS 14, step 5 in 2014, $121,635 for GS 14, step 5 in 2015, $132,352 for GS 15, step 2 in 2016, $140,552 for GS 15, step 3 in 2017, $148,267 for GS 15, step 4 in 2018, $151,633 for GS 15, step 4 in 2019, $156,228 in year 2019 dollars for GS 15, step 5 in 2020 and 2021, $160,822 in year 2019 dollars for GS 15, step 6 in 2022 and 2023, $165,417 in year 2019 dollars for GS 15, step 7 in 2024 through 2026, and $166,500 in year 2019 dollars for GS 15, step 7 starting in 2027. The GS 15 rate reaches its maximum at GS 15, step 7 and is equal to Level IV of the Executive Service. If Ms. Houtz entered the Executive Service, her salary could increase to as much as $213,600. The wage estimate for 2020 and thereafter is illustrated to grow at real growth 0.5 percent based on the average real pay increases from 2001 to 2019.

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Employee benefit estimates are based on actual benefit information from the Office of Personnel Management found at www.opm.gov as well as data from the U.S. Department of Labor, Bureau of Labor Statistics, Employer Cost of Employee Compensation - December 2018, 2019, found at www.bls.gov/ect. Ms. Houtz had health insurance through her employment and also participated in the FERS retirement plan, Thrift Savings Plan and Social Security. Based on her pay records, Ms. Houtz was enrolled in plan 104, which based on the Non-Postal Premium rates for the Federal Employees Health Benefits Program, is a Nationwide Blue Cross and Blue Shield Service Benefit Plan for employees, and the government contributes $230.18 biweekly, which is $5,984.68 annually in year 2019 dollars. This results in health benefits ranging from 7.8 percent of salary in 2001 to 3.6 percent of benefits by 2027, when she reaches her maximum step. Based on the FERS Handbook, FERS retirement benefits are illustrated at 10.7 percent of earnings, and TSP match is illustrated at the maximum match of 5 percent. Social Security benefits are illustrated at 6.2 percent of benefits up to the 2019 maximum of $132,800. I have assumed that employee benefits grow at the same rate as wages and are discounted to present value at the same discount rate. Since these tables assume annual work, I do not include employee benefits relating to unemployment, injury, illness or disability; benefits are estimated at 29.7 percent of wages in 2001 decreasing to 24.3 percent of wages in 2024 and thereafter.

Personal consumption is an offset of the income. I use a personal consumption offset based on a study by Ruble, Patton, and Nelson, "Patton-Nelson Personal Consumption Tables 2011-12," Journal of Legal Economics, Vol. 21, No. 1, 2014, pp. 41-55, based on data from the U.S. Department of Labor, Bureau of Labor Statistics, "Consumer Expenditure Survey, 2011-12," Washington DC, 2012, which shows personal consumption for a single person to decrease from 57.9 percent in 2001 to 38.7 percent in 2024 and thereafter.

I assume annual employment each year and show the accumulation through life expectancy. While these tables are calculated through the end of life expectancy, the losses from working through any age can be read off the table.

Based on the above assumptions, my opinion of the wage loss is $5,418,203 ▸ Table 9; this figure assumes work to age 82.1, but the ability to work through any assumed age may be read from Table 9; for example, the loss to age 67 is $3,886,091.

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II(A). LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOUSEHOLD MANAGEMENT SERVICES

Tables 10 through 12 show the pecuniary loss of tangible housekeeping chores and household management services. The number of hours of housekeeping and household management services is illustrated for a single, working female living alone at 15.73 Hours per week from 2001 through 2047, and for a retired, single female at 23.37 PER WEEK from 2048 and thereafter. This data is based on the American Time Use Survey published by the Bureau of Labor Statistics, www.bls.gov/tus, usefully summarized in a publication by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018.

The hourly value of the housekeeping and household management services is based on the mean hourly earnings of painters, construction and maintenance; childcare workers; waiters and waitresses; cooks, private household; laundry and dry-cleaning workers; maids and housekeeping cleaners; landscaping and groundskeeping workers; bookkeeping, accounting and auditing clerks; and taxi drivers and chauffeurs, which is $15.30 per hour in year 2018 dollars. This wage data is based on information from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2018 National Occupational Employment and Wage Statistics found at www.bls.gov/oes. This figure is corroborated by the average hourly values published by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018, which is also based on the BLS Occupational Employment Statistics.

I assess such services at their estimated market value which includes a conservative estimate of 50 percent hourly non-wage component reasonably charged by agencies or free-lance individuals who supply such services on a part-time basis, and who are responsible for advertising, hiring and vetting, training, insuring and bonding the part-time service provider, and who are also responsible for pay-related costs such as social security contributions, etc. If a person were to hire a free-lance employee directly instead of going through an agency, then he or she would have to take on the responsibility for all the non-wage costs that the agency would otherwise incur and then charge for. The money the person would pay directly in wages would be only a portion of the total costs. The total costs would include those items discussed above that the agency would otherwise incur.

Adding the non-wage component to the hourly wage is consistent with labor market theory and competitive market behavior. Peer-reviewed economic research supports this theory and shows that the non-wage costs can average up to 300 percent for the wage. See, for example, Cushing, Matthew J. and David I. Rosenbaum, "Valuing Household Services: A New Look at the Replacement Cost

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Approach," Journal of Legal Economics, Vol 19, No. 1, 2012, pp. 37-60, wherein the authors found that non-wage costs exceed wage costs by 167 percent. This is more than triple the 50 percent non-wage costs amount I use, discussed above. Also see Smith, David A., Stan V. Smith, and Stephanie R. Uhl, "Estimating the Value of Family Household Management Services: Approaches and Markups," Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, pp. 85-94. According to this research, the statistical probability is 99 percent that the non-wage costs exceed 250 percent of the wage cost. The use of only a 50 percent non-wage cost makes my estimate very conservative, and it far more than compensates for two possible variations: variations in the national wage depending on locality, and variations in different types of services actually performed in the household. Thus even if one or more of the different types of services are not performed, and even if the services are provided in low wage areas, my use of the low, 50 percent non-wage costs more than compensates for these factors.

According to Merry Maids, a national home cleaning service agency, the charges for their services within the largest 100 Metropolitan Statistical Areas with populations of 500,000 and up range from $40 to $65 per hour, averaging $49 per hour, in 2012. This hourly rate reflects non-wage costs of 250 percent of wages, and after adjusting for market factors, is four times the non-wage costs figure that I use, resulting in an hourly rate of more than double the rate that I use. Thus my use of only a 50 percent addition for non-wage costs is, in fact, very conservative. The hourly value of these services grows at the same rate as the wage growth rate discussed above.

Based on these assumptions, and Angela Houtz's life expectancy of 82.1 years, my opinion of the loss of the value of housekeeping and household management services is $1,055,116 ► Table 12.

III. LOSS OF VALUE OF LIFE

Tables 13 through 15 show the loss of the value of life. Economists have long agreed that life is valued at more than the lost earnings capacity. My estimate of the value of life is based on many economic studies on what we, as a contemporary society, actually pay to preserve the ability to lead a normal life. The studies examine incremental pay for risky occupations as well as a multitude of data regarding expenditure for life savings by individuals, industry, and state and federal agencies. Based on the average value of a statistical life and life expectancy of 82.1 years, my opinion of the loss of the value of life for Angela Houtz is $6,501,458 ► Table 15.

My estimate of the value of life is consistent with estimates published in other studies that examine and review the broad

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spectrum of economic literature on the value of life. Among
these is "The Plausible Range for the Value of Life," Journal of
Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, by T. R.
Miller. This study reviews 67 different estimates of the value
of life published by economists in peer-reviewed academic
journals. The Miller results, in most instances, show the value
of life to range from approximately $1.6 million to $2.9 million
dollars in year 1988 after-tax dollars, with a mean of
approximately $2.2 million dollars. In "The Value of Life:
Estimates with Risks by Occupation and Industry," Economic
Inquiry, Vol. 42, No. 1, May 2003, pp. 29-48, Professor W. K.
Viscusi estimates the value of life to be approximately $4.7
million dollars in year 2000 dollars. An early seminal paper on
the value of life was written by Richard Thaler and Sherwin
Rosen, "The Value of Saving a Life: Evidence from the Labor
Market." in N.E. Terlickyj (ed.), Household Production and
Consumption. New York: Columbia University Press, 1975, pp. 265-
300. The Meta-Analyses Appendix to this report reviews
additional literature suggesting a value of life of approximately
$5.4 million in year 2008 dollars.

Because it is generally accepted by economists, the economic
methodology for the valuation of life has been found to meet the
Daubert and Frye standards by many courts, along with the Rules
of Evidence in many states nationwide. My testimony on the value
of life has been accepted in approximately 225 state and federal
cases nationwide in approximately two-thirds of the states and
two-thirds of the federal jurisdictions. Testimony has been
accepted by U.S. district and appellate courts as well as in
state circuit, appellate, and supreme courts. Proof of general
acceptance and other standards is found in a discussion of the
extensive references to the scientific economic peer-reviewed
literature on the value of life listed in the **Value of Life
Appendix** to this report.

The underlying, academic, peer-reviewed studies fall into two
general groups: (1) consumer behavior and purchases of safety
devices; (2) wage risk premiums to workers; in addition, there is
a third group of studies consisting of cost-benefit analyses of
regulations. For example, one consumer safety study analyzes the
costs of smoke detectors and the lifesaving reduction associated
with them. One wage premium study examines the differential
rates of pay for dangerous occupations with a risk of death on
the job. Just as workers receive shift premiums for undesirable
work hours, workers also receive a higher rate of pay to accept a
increased risk of death on the job. A study of government
regulation examines the lifesaving resulting from the
installation of smoke stack scrubbers at high-sulphur, coal-
burning power plants. As a hypothetical example of the
methodology, assume that a safety device such as a carbon
monoxide detector costs $46 and results in lowering a person's
risk of premature death by one chance in 100,000. The cost per

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life saved is obtained by dividing $46 by the one in 100,000 probability, yielding $4,600,000. Overall, based on the peer-reviewed economic literature, I estimate the central tendency of the range of the economic studies to be approximately $4.9 million in year 2019 dollars.

Other factors may be weighed to determine if these estimated losses for Angela Houtz should be adjusted because of special qualities or circumstances that economists do not as yet have a methodology for analysis.

In each set of tables, the estimated losses are calculated from September 11, 2001 through an assumed trial or resolution date of January 1, 2020, and from that date thereafter. The last table in each set accumulates the past and future estimated losses. These estimates are provided as a tool, an aid, and a guide to assist the evaluation by others.

All opinions expressed in this report are clearly labeled as such. They are rendered in accordance with generally accepted standards within the field of economics and are expressed to a reasonable degree of economic certainty. Estimates, assumptions, illustrations and the use of benchmarks, which are not opinions, but which can be viewed as hypothetical in nature, are also clearly disclosed and identified herein.

In my opinion, it is reasonable for experts in the field of economics and finance to rely on the materials and information I reviewed in this case for the formulation of my substantive opinions herein.

If additional information is provided to me, which could alter my opinions, I may incorporate any such information into an update, revision, addendum, or supplement of the opinions expressed in this report.

If you have any questions, please do not hesitate to call me.

Sincerely,

Stan V. Smith, Ph.D.
President

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APPENDIX: HOUSEHOLD SERVICES VALUATION

Courts have long recognized claims for the value of tangible household family services as an element of damages in personal injury and wrongful death cases, as an aspect of the pecuniary loss in such cases. These services are those that are provided by the injured family member to himself or herself and to other family members, without charge or cost. Other family members who may receive such services can include spouses, children, parents or siblings; such family members do not necessarily have to reside in the same household to receive such services.

Economists and courts have also long recognized that an appropriate method in valuing such tangible services is to value their estimated market-based costs by examining costs paid in labor markets that provide generally comparable services for. Thus, economists can value the service by looking at market equivalents from which a pecuniary standard can be established. This approach is set forth in the 1913 U.S.Supreme Court Decision, Michigan Central Railroad Company v. Vreeland, 227 U.S. 59 (1913). So this method is a century old.

The Supreme Court's suggesting in valuing compensable services in the Vreeland decision is a standard that is not rigid, but actually rather general: "[The] pecuniary loss or damage must be one which can be measured by some standard.... Compensation for such loss manifestly does not include damages by way of recompense for grief or wounded feelings." Michigan Central v. Vreeland.

Examples of lost household services that used to be performed by persons (whether fatally or non-fatally injured) can include physical chores such as mowing the lawn, painting the house, cleaning the windows, doing the laundry, washing and repairing the car, preparing the meals and doing the dishes, among others. For many decades economists have met the Supreme Court's general standard by using labor market equivalents for cooks, laundry workers, gardeners, maids, etc. in valuing the physical chores regarding housekeeping services.

Additionally, economists have recognized that tangible services to family members include services well beyond the physical housekeeping chores. For example, William G. Jungbauer and Mark J. Odegard, in Maximizing Recovery in FELA Wrongful Death Actions, in Assessing Family Loss in Wrongful Death Litigation: The Special Roles of Lost Services and Personal Consumption, Lawyers & Judges Publishing Co., 1999, pp. 284, indicate that a complete analysis of all services performed by family members includes much, much more than the physical housekeeping chores. Frank D. Tinari, in a peer-reviewed, scientific, economic journal article "Household Services: Toward a More Comprehensive Measure," Journal of Forensic Economics, Vol. 11, No. 3, Fall

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1998, pp. 253-265, expresses the same view. Dr. Tinari has been
a tenured Professor at Seton Hall University, and is a former
president of the National Association of Forensic Economics.
There has been no peer-reviewed critique of this article since it
appeared.

Jungbauer and Odegard indicate that a person may have provided
services of many other professions such as that of a chauffeur,
driving other family members to appointments, or that of a
security guard, especially regarding the injury to a male spouse,
etc. Every family member acts as a companion to other family
members. And it is common for family members to act as
counselors for one another, typically providing advice and
counsel on important personal, family, medical, financial, career
or other issues. The marketplace can and does value such items
of loss. If the person cannot provide these services, or does so
at a reduced capacity or rate, there is a distinct and definite
loss to the other family members. These losses have a definite
and easily measurable pecuniary value. Vreeland requires only
that a "reasonable expectation" of loss of services be proven and
that such loss be valued by some standard, presumably a
reasonably-based economic standard, to allow recovery.

The economic literature on recovery of loss of services discusses
an estimated market-oriented valuation cost method to assess the
pecuniary value of the loss of accompaniment services, as well as
the value of advice, guidance and counsel services that family
members provide to one another, within a broadly defined scope of
family services. See, for example, Frank D. Tinari, "Household
Services: Toward a More Comprehensive Measure, " Journal of
Forensic Economics, Vol. 11, No. 3, Fall 1998, pp. 253-265.

Finally, according to Chief Justice Robert Wilentz of the Supreme
Court of New Jersey, in Green v. Bittner, 85 NJ 1, 1980, pp. 12,
accompaniment services, to be compensable, must be that which
would have provided services substantially equivalent to those
provided by the companions often hired today by the aged or
infirm, or substantially equivalent to services provided by
nurses or practical nurses; and its value must be confined to
what the marketplace would pay a stranger with similar
qualifications for performing such services.

In valuing the household services that are provided by family
members to one another, beyond the physical housekeeping chores,
both the U.S Supreme Court and the New Jersey Supreme Court
discuss looking at labor markets for the equivalent value of such
services. This methodology is identical to the traditional
approach that economists have been using for over four decades in
valuing the physical chores involved in housekeeping services.
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APPENDIX: VALUE OF LIFE

The economic methodology for the valuation of life has been found to meet the <u>Daubert</u> and <u>Frye</u> standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. The <u>Daubert</u> standard sets forth four criteria:

1.   Testing of the theory and science

2.   Peer Review

3.   Known or potential rate of error

4.   Generally accepted.

Testing of the theory and science has been accomplished over the past four decades, since the 1960s. Dozens of economists of high renown have published over a hundred articles in high quality, peer-reviewed economic journals measuring the value of life. The value of life theories are perhaps among the most well-tested in the field of economics, as evidenced by the enormous body of economic scientific literature that has been published in the field and is discussed below.

Peer Review of the concepts and methodology have been extraordinarily extensive. One excellent review of this extensive, peer-reviewed literature can be found in "The Value of Risks to Life and Health," W. K. Viscusi, <u>Journal of Economic Literature</u>, Vol. 31, December 1993, pp. 1912-1946. A second is "The Value of a Statistical Life: A Critical Review of Market Estimates throughout the World." W. K. Viscusi and J. E. Aldy, <u>Journal of Risk and Uncertainty</u>, Vol. 27, No. 1, November 2002, pp. 5-76. Additional theoretical and empirical work by Viscusi, a leading researcher in the field, can be found in: "The Value of Life", W. K. Viscusi, John M. Olin Center for Law, Economics, and Business, Harvard Law School, Discussion Paper No. 517, June 2005. An additional peer-reviewed article discusses the application to forensic economics: "The Plausible Range for the Value of Life," T. R. Miller, <u>Journal of Forensic Economics</u>, Vol. 3, No. 3, Fall 1990, pp. 17-39, which discusses the many dozens of articles published in other peer-reviewed economic journals on this topic. This concept is discussed in detail in "Willingness to Pay Comes of Age: Will the System Survive?" T. R. Miller, <u>Northwestern University Law Review</u>, Summer 1989, pp. 876-907, and "Hedonic Damages in Personal Injury and Wrongful Death

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Litigation," by Stan V. Smith in Gaughan and Thornton, eds., Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol. 74, pp. 39-59, JAI Press, Greenwich, CT, 1993. Kenneth Arrow, a Nobel Laureate in economics, discusses this method for valuing life in "Invaluable Goods," Journal of Economic Literature, Vol. 35, No. 2, 1997, pp. 759. See the Meta-Analyses Appendix for an additional review of the literature.

The known or potential rate of error is well researched. All of these articles discuss the known or potential rate of error, well within the acceptable standard in the field of economics, generally using a 95% confidence rate for the statistical testing and acceptance of results. There are few areas in the field of economics where the known or potential rate of error has been as well-accepted and subject to more extensive investigation.

General Acceptance of the concepts and methodology on the value of life in the field of economics is extensive. This methodology is and has been generally accepted in the field of economics for many years. Indeed, according to the prestigious and highly-regarded research institute, The Rand Corporation, by 1988, the peer-reviewed scientific methods for estimating the value of life were well-accepted: "Most economists would agree that the willingness-to-pay methodology is the most conceptually appropriate criterion for establishing the value of life," Computing Economic loss in Cases of Wrongful Death, King and Smith, Rand Institute for Civil Justice, R-3549-ICJ, 1988.

While first discussed in cutting edge, peer-reviewed economic journals, additional proof of general acceptance is now indicated by the fact that this methodology is now taught in standard economics courses at the undergraduate and graduate level throughout hundreds of colleges and universities nationwide as well as the fact that it is taught and discussed in widely-accepted textbooks in the field of law and economics: Economics, Sixth Edition, David C. Colander, McGraw-Hill Irwin, Boston, 2006, pp. 463-465; this introductory economics textbook is the third most widely used textbook in college courses nationwide. Hamermesh and Rees's The Economics of Work and Pay, Harper-Collins, 1993, Chapter 13, a standard advanced textbook in labor economics, also discusses the methodology for valuing life. Other textbooks discuss this topic as well. Richard Posner, a Judge and former Chief Judge of the U.S. Court of Appeals for the highly regarded 7th Circuit and Senior Lecturer at the University of Chicago Law School, one of most prolific legal writers in America, details the Value of Life approach in his widely used textbooks: Economic Analysis of Law, 1986, Little Brown & Co., pp. 182-185 and Tort Law, 1982, Little Brown & Co., pp. 120-126.

As further evidence of general acceptance in the field, some surveys (albeit non-scientific) published in the field of

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forensic economics show that hundreds of economists nationwide are now familiar with this methodology and are available to prepare (and critique) forensic economic value of life estimates. Indeed, some economists who indicate they will prepare such analysis for plaintiffs also are willing to critique such analysis for defendants, as I have done. That an economist is willing to critique a report does not indicate that he or she is opposed to the concept or the methodology, but merely available to assure that the plaintiff economist has employed proper techniques. The fact that there are economists who indicate they do not prepare estimates of value of life is again no indication that they oppose the methodology: many claim they are not familiar with the literature and untrained in this area. While some CPAs and others without a degree in economics have opposed these methods, such professionals do not have the requisite academic training and are unqualified to make such judgements. However, as in any field of economics, this area is not without any dissent. General acceptance does not mean universal acceptance.

Additional evidence of general acceptance in the field is found in the teaching of the concepts regarding the value of life. Forensic Economics is now taught as a special field in a number of institutions nationwide. I taught what is believed to be the first course ever presented in the field of Forensic Economics at DePaul University in Spring, 1990. My own book, Economic/Hedonic Damages, Anderson, 1990, and supplemental updates thereto, co-authored with Dr. Michael Brookshire, a Professor of Economics in West Virginia, has been used as a textbook in at least 5 colleges and universities nationwide in such courses in economics, and has a thorough discussion of the methodology. Toppino et. al., in "Forensic Economics in the Classroom," published in The Earnings Analyst, Journal of the American Rehabilitation Economics Association, Vol. 4, 2001, pp. 53-86, indicate that hedonic damages is one of 15 major topic areas taught in such courses.

Lastly, general acceptance is found by examining publications in the primary journal in the field of Forensic Economics, which is the peer-reviewed Journal of Forensic Economics, where there have been published many articles on the value of life. Some are cited above. Others include: "The Econometric Basis for Estimates of the Value of Life," W. K. Viscusi, Vol 3, No. 3, Fall 1990, pp. 61-70; "Hedonic Damages in the Courtroom Setting." Stan V. Smith, Vol. 3, No. 3, Fall 1990, pp. 41-49; "Issues Affecting the Calculated Value of Life," E. P. Berla, M. L. Brookshire and Stan V. Smith, Vol 3, No. 1, 1990, pp. 1-8; "Hedonic Damages and Personal Injury: A Conceptual Approach." G. R. Albrecht, Vol. 5., No. 2, Spring/Summer 1992, pp. 97-104; "The Application of the Hedonic Damages Concept to Wrongful and Personal Injury Litigation." G. R. Albrecht, Vol. 7, No. 2, Spring/Summer 1994, pp. 143-150; and also "A Review of the Monte Carlo Evidence Concerning Hedonic Value of Life Estimates," R. F.

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Gilbert, Vol. 8, No. 2, Spring/Summer 1995, pp. 125-130.
Professor Ike Mathur, while Chairman of the Department of Finance
at Southern Illinois University wrote an article on how the value
of life studies can be used to provide a basis for estimating the
value of life per year in application to litigation. This
article corroborates my approach: "Estimating Value of Life per
Life Year." I. Mathur, Journal of Forensic Economics, Vol. 3,
No. 3, 1990, pp. 95-96. As do many of the authors of
applications of the value of life literature to litigation
economics, Professor Mathur has frequently testified in court,
and courts have admitted his testimony.

It is important to note that this methodology is endorsed and
employed by the U. S. Government as the standard and recommended
approach for use by all U. S. Agencies in valuing life for policy
purposes, as mandated in current and past Presidential Executive
Orders in effect since 1972, and as discussed in "Report to
Congress on the Costs and Benefits of Federal Regulations,"
Office of Management and Budget, 1998, and "Economic Analysis of
Federal Regulations Under Executive Order 12866," Executive
Office of the President, Office of Management and Budget, pp. 1-
37, and "Report to the President on Executive Order No. 12866,"
Regulatory Planning and Review, May 1, 1994, Office of
Information and Regulatory Affairs, Office of Management and
Budget. Prior presidents signed similar orders as discussed in
"Federal Agency Valuations of Human life," Administrative
Conference of the United States, Report for Recommendation 88-7,
December 1988, pp. 368-408. 926

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APPENDIX: META-ANALYSES AND VALUE OF LIFE RESULTS SINCE 2000

Below I list the principal systematic reviews (meta-analyses), since the year 2000, of the value of life literature, and the values of a statistical life that they recommend. In statistics, a meta-analysis combines the results of several studies that address a set of related research hypotheses. Meta-analysis increase the statistical power of studies by analyzing a group of studies and provide a more powerful and accurate data analysis than would result from analyzing each study alone. Based on those reviews, the Summary Table suggests a best estimate. The following table summarizes the studies and their findings.

These statistically based studies place the value between $4.4 and $7.5 million, with $5.9 million in year 2005 dollars representing a conservative yet credible estimate of the average (and range midpoint) of the values of a statistical life published in the studies in year 2005 dollars. Net of human capital, a credible net value of life based on all these literature reviews to be $4.8 million in year 2005 dollars, or $5.4 million in year 2008 dollars.

The actual value that I use, $4.1 million in year 2008 dollars ($4.9 million in year 2019 dollars) is approximately 24 percent lower than a conservative average estimate based on the credible meta-analyses. This value was originally based on a review conducted in the late 1980s, averaging the results published by that time. I have increased that late 1980s value only by inflation over time, despite the fact a review of literature over the years since that time has put obvious upward pressure on the figure that I use.

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VALUE OF STATISTICAL LIFE SUMMARY TABLE

Mean and range of value of statistical life estimates (in 2005 dollars) from the best meta-analyses and systematic reviews since 2000 and characteristics of those reviews.

Study	Formal Meta-Analysis?	Number of Values	Best Estimate (2005 Dollars)	Range	Context
Miller 2000	Yes	68 estimates	$5.1M	$4.5-$6.2M	US estimate from all
Mrozek & Taylor 2002	Yes	203 estimates	$4.4M	+ or - 35%	Labor market
Viscusi & Aldy 2003	Yes	49 estimates	$6.5M	$5.1-$9.6M	Labor market, US estimate from all
Kochi et al. 2006	Yes	234 estimates	$6.0M	+ or - 44%	Labor market survey
Bellavance 2006 (published in 2009)	Yes	37 estimates	$7.5M	+ or - 19%	Labor market

Adapted from Ted R. Miller's paper "Hedonic Damages," _Journal of Forensic Economics_, Vol. 20, No. 2 (October 2008), pp. 137-153.

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Miller (2000) started from the Miller 1989 JFE estimates and used statistical methods to adjust for differences between studies. It also added newer studies, primarily ones outside the United States. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Miller, Ted R, "Variations between Countries in Values of Statistical Life", <u>Journal of Transport Economics and Policy</u>, Vol. 34, No. 2 (May 2000), pp. 169-188.

Mrozek and Taylor (2002) searched intensively for studies of the value of life implied by wages paid for risky jobs. They coded all values from each study rather than a most appropriate estimate. A statistical analysis identified what factors accounted for the differences in values between studies. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Mrozek, Janusz R. and Laura O. Taylor, "What Determines the Value of Life? A Meta-Analysis", <u>Journal of Policy Analysis and Management</u>, Vol. 21, No. 2 (2002), pp. 253-270.

Viscusi and Aldy (2003) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. W.K. Viscusi and J.E. Aldy, "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World", <u>Journal of Risk and Uncertainty</u>, Vol. 27, No. 1 (2003), pp. 5-76.

Kochi et al. (2006) searched intensively for studies of the value of life implied by wages and coded all values from each study rather than a most appropriate estimate. They did not filter study quality carefully. The best estimate was derived by statistical methods based on the distribution of the values within and across studies. Kochi, Ikuho, Bryan Hubbell, and Randall Kramer, "An Empirical Bayes Approach to Combining and Comparing Estimates of the Value of a Statistical Life for Environmental Policy Analysis", <u>Environmental and Resource Economics</u>, Vol. 34 (2006), pp. 385-406.

Bellavance et al. (2009) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. Bellavance, Francois, Georges Dionne, and Martin Lebeau, "The Value of a Statistical Life: A Meta-Analysis with a Mixed Effects Regression Model," <u>Journal of Health Economics</u>, Vol. 28, Issue 2, (2009), pp. 444-464. 3A22

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SUMMARY OF LOSSES FOR ANGELA HOUTZ

TABLE	DESCRIPTION	ESTIMATE
*****	*******************************	***********
	EARNINGS	
9	LOSS OF WAGES & BENEFITS, NET OF PERSONAL CONSUMPTION Annual Employment to age 67	$3,886,091
	HOUSEHOLD/FAMILY SERVICES	
12	LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOME MANAGEMENT SERVICES	$1,055,116
	LOSS OF ENJOYMENT OF LIFE	
15	LOSS OF VALUE OF LIFE	$6,501,458

The information on this Summary of Losses is intended to summarize losses under certain given assumptions. Please refer to the report and the tables for all the opinions.

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Table 1

LOSS OF PAST WAGES
2001 - 2019

YEAR	AGE	WAGES	CUMULATE
****	***	**********	**********
2001	27	$16,165	$16,165
2002	28	57,550	73,715
2003	29	61,942	135,657
2004	30	72,108	207,765
2005	31	77,274	285,039
2006	32	82,509	367,548
2007	33	87,338	454,886
2008	34	91,259	546,145
2009	35	102,721	648,866
2010	36	108,717	757,583
2011	37	112,224	869,807
2012	38	115,731	985,538
2013	39	115,731	1,101,269
2014	40	120,429	1,221,698
2015	41	121,635	1,343,333
2016	42	132,352	1,475,685
2017	43	140,552	1,616,237
2018	44	148,267	1,764,504
2019	45	151,633	$1,916,137

ANGELA HOUTZ $1,916,137

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Table 2

LOSS OF PAST EMPLOYEE BENEFITS
2001 - 2019

YEAR	AGE	EMPLOYEE BENEFITS	CUMULATE
****	***	********	********
2001	27	$4,801	$4,801
2002	28	16,805	21,606
2003	29	17,839	39,445
2004	30	20,262	59,707
2005	31	21,482	81,189
2006	32	22,772	103,961
2007	33	24,018	127,979
2008	34	24,914	152,893
2009	35	27,529	180,422
2010	36	28,919	209,341
2011	37	29,852	239,193
2012	38	30,784	269,977
2013	39	30,784	300,761
2014	40	31,914	332,675
2015	41	32,112	364,787
2016	42	34,147	398,934
2017	43	35,700	434,634
2018	44	37,215	471,849
2019	45	38,060	$509,909

ANGELA HOUTZ $509,909

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Table 3

LOSS OF PAST PERSONAL CONSUMPTION
2001 - 2019

YEAR	AGE	PERSONAL CONSUMPTION	CUMULATE
****	***	***********	***********
2001	27	-$12,140	-$12,140
2002	28	-43,047	-55,187
2003	29	-44,598	-99,785
2004	30	-48,240	-148,025
2005	31	-50,074	-198,099
2006	32	-53,383	-251,482
2007	33	-54,848	-306,330
2008	34	-57,219	-363,549
2009	35	-59,373	-422,922
2010	36	-62,730	-485,652
2011	37	-64,753	-550,405
2012	38	-66,777	-617,182
2013	39	-66,777	-683,959
2014	40	-66,356	-750,315
2015	41	-67,021	-817,336
2016	42	-72,529	-889,865
2017	43	-73,509	-963,374
2018	44	-77,395	-1,040,769
2019	45	-79,152	-$1,119,921

ANGELA HOUTZ -$1,119,921

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Table 4

ECONOMIC LOSS TO DATE
2001 - 2019

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	**********	********	***********	**********	**********
2001	27	$16,165	$4,801	-$12,140	$8,826	$8,826
2002	28	57,550	16,805	-43,047	31,308	40,134
2003	29	61,942	17,839	-44,598	35,183	75,317
2004	30	72,108	20,262	-48,240	44,130	119,447
2005	31	77,274	21,482	-50,074	48,682	168,129
2006	32	82,509	22,772	-53,383	51,898	220,027
2007	33	87,338	24,018	-54,848	56,508	276,535
2008	34	91,259	24,914	-57,219	58,954	335,489
2009	35	102,721	27,529	-59,373	70,877	406,366
2010	36	108,717	28,919	-62,730	74,906	481,272
2011	37	112,224	29,852	-64,753	77,323	558,595
2012	38	115,731	30,784	-66,777	79,738	638,333
2013	39	115,731	30,784	-66,777	79,738	718,071
2014	40	120,429	31,914	-66,356	85,987	804,058
2015	41	121,635	32,112	-67,021	86,726	890,784
2016	42	132,352	34,147	-72,529	93,970	984,754
2017	43	140,552	35,700	-73,509	102,743	1,087,497
2018	44	148,267	37,215	-77,395	108,087	1,195,584
2019	45	151,633	38,060	-79,152	110,541	$1,306,125

ANGELA HOUTZ $1,916,137 $509,909   -$1,119,921 $1,306,125

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Table 5

PRESENT VALUE OF FUTURE WAGES
2020 - 2056

YEAR	AGE	WAGES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	********	********	**********	**********
2020	46	$160,134	0.98765	$158,156	$158,156
2021	47	160,834	0.97546	156,887	315,043
2022	48	166,495	0.96342	160,405	475,448
2023	49	167,328	0.95152	159,216	634,664
2024	50	172,969	0.93978	162,553	797,217
2025	51	173,834	0.92817	161,348	958,565
2026	52	174,703	0.91672	160,154	1,118,719
2027	53	176,726	0.90540	160,008	1,278,727
2028	54	177,610	0.89422	158,822	1,437,549
2029	55	178,498	0.88318	157,646	1,595,195
2030	56	179,390	0.87228	156,478	1,751,673
2031	57	180,287	0.86151	155,319	1,906,992
2032	58	181,188	0.85087	154,167	2,061,159
2033	59	182,094	0.84037	153,026	2,214,185
2034	60	183,004	0.82999	151,891	2,366,076
2035	61	183,919	0.81975	150,768	2,516,844
2036	62	184,839	0.80963	149,651	2,666,495
2037	63	185,763	0.79963	148,542	2,815,037
2038	64	186,692	0.78976	147,442	2,962,479
2039	65	187,625	0.78001	146,349	3,108,828
2040	66	188,563	0.77038	145,265	3,254,093
2041	67	189,506	0.76087	144,189	3,398,282
2042	68	190,454	0.75147	143,120	3,541,402
2043	69	191,406	0.74220	142,062	3,683,464
2044	70	192,363	0.73303	141,008	3,824,472
2045	71	193,325	0.72398	139,963	3,964,435
2046	72	194,292	0.71505	138,928	4,103,363
2047	73	195,263	0.70622	137,899	4,241,262
2048	74	196,239	0.69750	136,877	4,378,139
2049	75	197,220	0.68889	135,863	4,514,002
2050	76	198,206	0.68038	134,855	4,648,857
2051	77	199,197	0.67198	133,856	4,782,713
2052	78	200,193	0.66369	132,866	4,915,579
2053	79	201,194	0.65549	131,881	5,047,460
2054	80	202,200	0.64740	130,904	5,178,364
2055	81	203,211	0.63941	129,935	5,308,299
2056	82	158,905	0.63325	100,627	$5,408,926

ANGELA HOUTZ $5,408,926

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Table 6

PRESENT VALUE OF FUTURE EMPLOYEE BENEFITS
2020 - 2056

YEAR	AGE	EMPLOYEE BENEFITS	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	********	********	**********	**********
2020	46	$39,713	0.98765	$39,223	$39,223
2021	47	39,887	0.97546	38,908	78,131
2022	48	40,791	0.96342	39,299	117,430
2023	49	40,995	0.95152	39,008	156,438
2024	50	42,031	0.93978	39,500	195,938
2025	51	42,242	0.92817	39,208	235,146
2026	52	42,453	0.91672	38,918	274,064
2027	53	42,944	0.90540	38,881	312,945
2028	54	43,159	0.89422	38,594	351,539
2029	55	43,375	0.88318	38,308	389,847
2030	56	43,592	0.87228	38,024	427,871
2031	57	43,810	0.86151	37,743	465,614
2032	58	44,029	0.85087	37,463	503,077
2033	59	44,249	0.84037	37,186	540,263
2034	60	44,470	0.82999	36,910	577,173
2035	61	44,692	0.81975	36,636	613,809
2036	62	44,916	0.80963	36,365	650,174
2037	63	45,140	0.79963	36,095	686,269
2038	64	45,366	0.78976	35,828	722,097
2039	65	45,593	0.78001	35,563	757,660
2040	66	45,821	0.77038	35,300	792,960
2041	67	46,050	0.76087	35,038	827,998
2042	68	46,280	0.75147	34,778	862,776
2043	69	46,512	0.74220	34,521	897,297
2044	70	46,744	0.73303	34,265	931,562
2045	71	46,978	0.72398	34,011	965,573
2046	72	47,213	0.71505	33,760	999,333
2047	73	47,449	0.70622	33,509	1,032,842
2048	74	47,686	0.69750	33,261	1,066,103
2049	75	47,924	0.68889	33,014	1,099,117
2050	76	48,164	0.68038	32,770	1,131,887
2051	77	48,405	0.67198	32,527	1,164,414
2052	78	48,647	0.66369	32,287	1,196,701
2053	79	48,890	0.65549	32,047	1,228,748
2054	80	49,135	0.64740	31,810	1,260,558
2055	81	49,380	0.63941	31,574	1,292,132
2056	82	38,614	0.63325	24,452	$1,316,584

ANGELA HOUTZ $1,316,584

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Table 7

PRESENT VALUE OF FUTURE PERSONAL CONSUMPTION
2020 - 2056

YEAR	AGE	PERSONAL CONSUMPTION	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	***********	********	***********	***********
2020	46	-$80,067	0.98765	-$79,078	-$79,078
2021	47	-80,417	0.97546	-78,444	-157,522
2022	48	-83,081	0.96342	-80,042	-237,564
2023	49	-83,497	0.95152	-79,449	-317,013
2024	50	-83,198	0.93978	-78,188	-395,201
2025	51	-83,614	0.92817	-77,608	-472,809
2026	52	-84,032	0.91672	-77,034	-549,843
2027	53	-85,005	0.90540	-76,964	-626,807
2028	54	-85,430	0.89422	-76,393	-703,200
2029	55	-85,858	0.88318	-75,828	-779,028
2030	56	-86,287	0.87228	-75,266	-854,294
2031	57	-86,718	0.86151	-74,708	-929,002
2032	58	-87,151	0.85087	-74,154	-1,003,156
2033	59	-87,587	0.84037	-73,605	-1,076,761
2034	60	-88,025	0.82999	-73,060	-1,149,821
2035	61	-88,465	0.81975	-72,519	-1,222,340
2036	62	-88,908	0.80963	-71,983	-1,294,323
2037	63	-89,352	0.79963	-71,449	-1,365,772
2038	64	-89,799	0.78976	-70,920	-1,436,692
2039	65	-90,248	0.78001	-70,394	-1,507,086
2040	66	-90,699	0.77038	-69,873	-1,576,959
2041	67	-91,152	0.76087	-69,355	-1,646,314
2042	68	-91,608	0.75147	-68,841	-1,715,155
2043	69	-92,066	0.74220	-68,331	-1,783,486
2044	70	-92,527	0.73303	-67,825	-1,851,311
2045	71	-92,989	0.72398	-67,322	-1,918,633
2046	72	-93,454	0.71505	-66,824	-1,985,457
2047	73	-93,922	0.70622	-66,330	-2,051,787
2048	74	-94,391	0.69750	-65,838	-2,117,625
2049	75	-94,863	0.68889	-65,350	-2,182,975
2050	76	-95,337	0.68038	-64,865	-2,247,840
2051	77	-95,814	0.67198	-64,385	-2,312,225
2052	78	-96,293	0.66369	-63,909	-2,376,134
2053	79	-96,774	0.65549	-63,434	-2,439,568
2054	80	-97,258	0.64740	-62,965	-2,502,533
2055	81	-97,744	0.63941	-62,498	-2,565,031
2056	82	-76,433	0.63325	-48,401	-$2,613,432

ANGELA HOUTZ   -$2,613,432

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Table 8

PRESENT VALUE OF FUTURE WAGE AND BENEFIT LOSS
2020 - 2056

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	**********	**********	***********	**********	**********
2020	46	$158,156	$39,223	-$79,078	$118,301	$118,301
2021	47	156,887	38,908	-78,444	117,351	235,652
2022	48	160,405	39,299	-80,042	119,662	355,314
2023	49	159,216	39,008	-79,449	118,775	474,089
2024	50	162,553	39,500	-78,188	123,865	597,954
2025	51	161,348	39,208	-77,608	122,948	720,902
2026	52	160,154	38,918	-77,034	122,038	842,940
2027	53	160,008	38,881	-76,964	121,925	964,865
2028	54	158,822	38,594	-76,393	121,023	1,085,888
2029	55	157,646	38,308	-75,828	120,126	1,206,014
2030	56	156,478	38,024	-75,266	119,236	1,325,250
2031	57	155,319	37,743	-74,708	118,354	1,443,604
2032	58	154,167	37,463	-74,154	117,476	1,561,080
2033	59	153,026	37,186	-73,605	116,607	1,677,687
2034	60	151,891	36,910	-73,060	115,741	1,793,428
2035	61	150,768	36,636	-72,519	114,885	1,908,313
2036	62	149,651	36,365	-71,983	114,033	2,022,346
2037	63	148,542	36,095	-71,449	113,188	2,135,534
2038	64	147,442	35,828	-70,920	112,350	2,247,884
2039	65	146,349	35,563	-70,394	111,518	2,359,402
2040	66	145,265	35,300	-69,873	110,692	2,470,094
2041	67	144,189	35,038	-69,355	109,872	2,579,966
2042	68	143,120	34,778	-68,841	109,057	2,689,023
2043	69	142,062	34,521	-68,331	108,252	2,797,275
2044	70	141,008	34,265	-67,825	107,448	2,904,723
2045	71	139,963	34,011	-67,322	106,652	3,011,375
2046	72	138,928	33,760	-66,824	105,864	3,117,239
2047	73	137,899	33,509	-66,330	105,078	3,222,317
2048	74	136,877	33,261	-65,838	104,300	3,326,617
2049	75	135,863	33,014	-65,350	103,527	3,430,144
2050	76	134,855	32,770	-64,865	102,760	3,532,904
2051	77	133,856	32,527	-64,385	101,998	3,634,902
2052	78	132,866	32,287	-63,909	101,244	3,736,146
2053	79	131,881	32,047	-63,434	100,494	3,836,640
2054	80	130,904	31,810	-62,965	99,749	3,936,389
2055	81	129,935	31,574	-62,498	99,011	4,035,400
2056	82	100,627	24,452	-48,401	76,678	$4,112,078

ANGELA HOUTZ $5,408,926 $1,316,584   -$2,613,432 $4,112,078

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 9

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS
2001 - 2056

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	**********	**********	***********	**********	**********
2001	27	$16,165	$4,801	-$12,140	$8,826	$8,826
2002	28	57,550	16,805	-43,047	31,308	40,134
2003	29	61,942	17,839	-44,598	35,183	75,317
2004	30	72,108	20,262	-48,240	44,130	119,447
2005	31	77,274	21,482	-50,074	48,682	168,129
2006	32	82,509	22,772	-53,383	51,898	220,027
2007	33	87,338	24,018	-54,848	56,508	276,535
2008	34	91,259	24,914	-57,219	58,954	335,489
2009	35	102,721	27,529	-59,373	70,877	406,366
2010	36	108,717	28,919	-62,730	74,906	481,272
2011	37	112,224	29,852	-64,753	77,323	558,595
2012	38	115,731	30,784	-66,777	79,738	638,333
2013	39	115,731	30,784	-66,777	79,738	718,071
2014	40	120,429	31,914	-66,356	85,987	804,058
2015	41	121,635	32,112	-67,021	86,726	890,784
2016	42	132,352	34,147	-72,529	93,970	984,754
2017	43	140,552	35,700	-73,509	102,743	1,087,497
2018	44	148,267	37,215	-77,395	108,087	1,195,584
2019	45	151,633	38,060	-79,152	110,541	1,306,125
2020	46	158,156	39,223	-79,078	118,301	1,424,426
2021	47	156,887	38,908	-78,444	117,351	1,541,777
2022	48	160,405	39,299	-80,042	119,662	1,661,439
2023	49	159,216	39,008	-79,449	118,775	1,780,214
2024	50	162,553	39,500	-78,188	123,865	1,904,079
2025	51	161,348	39,208	-77,608	122,948	2,027,027
2026	52	160,154	38,918	-77,034	122,038	2,149,065
2027	53	160,008	38,881	-76,964	121,925	2,270,990
2028	54	158,822	38,594	-76,393	121,023	2,392,013
2029	55	157,646	38,308	-75,828	120,126	2,512,139
2030	56	156,478	38,024	-75,266	119,236	2,631,375
2031	57	155,319	37,743	-74,708	118,354	2,749,729
2032	58	154,167	37,463	-74,154	117,476	2,867,205
2033	59	153,026	37,186	-73,605	116,607	2,983,812
2034	60	151,891	36,910	-73,060	115,741	3,099,553
2035	61	150,768	36,636	-72,519	114,885	3,214,438
2036	62	149,651	36,365	-71,983	114,033	3,328,471
2037	63	148,542	36,095	-71,449	113,188	3,441,659
2038	64	147,442	35,828	-70,920	112,350	3,554,009
2039	65	146,349	35,563	-70,394	111,518	3,665,527
2040	66	145,265	35,300	-69,873	110,692	3,776,219
2041	67	144,189	35,038	-69,355	109,872	3,886,091
2042	68	143,120	34,778	-68,841	109,057	3,995,148
2043	69	142,062	34,521	-68,331	108,252	4,103,400
2044	70	141,008	34,265	-67,825	107,448	4,210,848
2045	71	139,963	34,011	-67,322	106,652	4,317,500
2046	72	138,928	33,760	-66,824	105,864	4,423,364
2047	73	137,899	33,509	-66,330	105,078	4,528,442
2048	74	136,877	33,261	-65,838	104,300	4,632,742
2049	75	135,863	33,014	-65,350	103,527	4,736,269
2050	76	134,855	32,770	-64,865	102,760	4,839,029

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 9 (Cont.)

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS
2001 - 2056

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
2051	77	133,856	32,527	-64,385	101,998	4,941,027
2052	78	132,866	32,287	-63,909	101,244	5,042,271
2053	79	131,881	32,047	-63,434	100,494	5,142,765
2054	80	130,904	31,810	-62,965	99,749	5,242,514
2055	81	129,935	31,574	-62,498	99,011	5,341,525
2056	82	100,627	24,452	-48,401	76,678	$5,418,203

ANGELA HOUTZ $7,325,063 $1,826,493 -$3,733,353 $5,418,203

SMITH ECONOMICS GROUP, LTD. 312/943-1551

Table 10

LOSS OF PAST HOUSEHOLD SERVICES
2001 - 2019

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*********	********
2001	27	$3,581	$3,581
2002	28	12,015	15,596
2003	29	12,648	28,244
2004	30	13,206	41,450
2005	31	13,608	55,058
2006	32	14,137	69,195
2007	33	14,714	83,909
2008	34	15,147	99,056
2009	35	15,306	114,362
2010	36	15,494	129,856
2011	37	15,574	145,430
2012	38	16,488	161,918
2013	39	16,488	178,406
2014	40	16,911	195,317
2015	41	17,328	212,645
2016	42	17,698	230,343
2017	43	18,231	248,574
2018	44	18,764	267,338
2019	45	19,327	$286,665

ANGELA HOUTZ $286,665

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 11

PRESENT VALUE OF FUTURE HOUSEHOLD SERVICES
2020 - 2056

YEAR	AGE	HOUSEHOLD SERVICES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
2020	46	$19,907	0.98765	$19,661	$19,661
2021	47	20,106	0.97546	19,613	39,274
2022	48	20,307	0.96342	19,564	58,838
2023	49	20,510	0.95152	19,516	78,354
2024	50	20,715	0.93978	19,468	97,822
2025	51	20,922	0.92817	19,419	117,241
2026	52	21,131	0.91672	19,371	136,612
2027	53	21,342	0.90540	19,323	155,935
2028	54	21,555	0.89422	19,275	175,210
2029	55	21,771	0.88318	19,228	194,438
2030	56	21,989	0.87228	19,181	213,619
2031	57	22,209	0.86151	19,133	232,752
2032	58	22,431	0.85087	19,086	251,838
2033	59	22,655	0.84037	19,039	270,877
2034	60	22,882	0.82999	18,992	289,869
2035	61	23,111	0.81975	18,945	308,814
2036	62	23,342	0.80963	18,898	327,712
2037	63	23,575	0.79963	18,851	346,563
2038	64	23,811	0.78976	18,805	365,368
2039	65	24,049	0.78001	18,758	384,126
2040	66	24,289	0.77038	18,712	402,838
2041	67	24,532	0.76087	18,666	421,504
2042	68	24,777	0.75147	18,619	440,123
2043	69	25,025	0.74220	18,574	458,697
2044	70	25,275	0.73303	18,527	477,224
2045	71	25,528	0.72398	18,482	495,706
2046	72	25,783	0.71505	18,436	514,142
2047	73	26,041	0.70622	18,391	532,533
2048	74	38,894	0.69750	27,129	559,662
2049	75	39,283	0.68889	27,062	586,724
2050	76	39,676	0.68038	26,995	613,719
2051	77	40,073	0.67198	26,928	640,647
2052	78	40,474	0.66369	26,862	667,509
2053	79	40,879	0.65549	26,796	694,305
2054	80	41,288	0.64740	26,730	721,035
2055	81	41,701	0.63941	26,664	747,699
2056	82	32,771	0.63325	20,752	$768,451

ANGELA HOUTZ $768,451

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 12

PRESENT VALUE OF NET HOUSEHOLD SERVICES LOSS
2001 - 2056

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	**********	**********
2001	27	$3,581	$3,581
2002	28	12,015	15,596
2003	29	12,648	28,244
2004	30	13,206	41,450
2005	31	13,608	55,058
2006	32	14,137	69,195
2007	33	14,714	83,909
2008	34	15,147	99,056
2009	35	15,306	114,362
2010	36	15,494	129,856
2011	37	15,574	145,430
2012	38	16,488	161,918
2013	39	16,488	178,406
2014	40	16,911	195,317
2015	41	17,328	212,645
2016	42	17,698	230,343
2017	43	18,231	248,574
2018	44	18,764	267,338
2019	45	19,327	286,665
2020	46	19,661	306,326
2021	47	19,613	325,939
2022	48	19,564	345,503
2023	49	19,516	365,019
2024	50	19,468	384,487
2025	51	19,419	403,906
2026	52	19,371	423,277
2027	53	19,323	442,600
2028	54	19,275	461,875
2029	55	19,228	481,103
2030	56	19,181	500,284
2031	57	19,133	519,417
2032	58	19,086	538,503
2033	59	19,039	557,542
2034	60	18,992	576,534
2035	61	18,945	595,479
2036	62	18,898	614,377
2037	63	18,851	633,228
2038	64	18,805	652,033
2039	65	18,758	670,791
2040	66	18,712	689,503
2041	67	18,666	708,169
2042	68	18,619	726,788
2043	69	18,574	745,362
2044	70	18,527	763,889
2045	71	18,482	782,371
2046	72	18,436	800,807
2047	73	18,391	819,198
2048	74	27,129	846,327
2049	75	27,062	873,389
2050	76	26,995	900,384

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 12 (Cont.)

PRESENT VALUE OF NET HOUSEHOLD SERVICES LOSS
2001 - 2056

		HOUSEHOLD	
YEAR	AGE	SERVICES	CUMULATE
****	***	**********	**********
2051	77	26,928	927,312
2052	78	26,862	954,174
2053	79	26,796	980,970
2054	80	26,730	1,007,700
2055	81	26,664	1,034,364
2056	82	20,752	$1,055,116

ANGELA HOUTZ $1,055,116

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 13

LOSS OF PAST LVL OF ANGELA
2001 - 2019

YEAR	AGE	LVL	CUMULATE
2001	27	$29,936	$29,936
2002	28	100,782	130,718
2003	29	102,677	233,395
2004	30	106,024	339,419
2005	31	109,650	449,069
2006	32	112,436	561,505
2007	33	117,023	678,528
2008	34	117,128	795,656
2009	35	120,314	915,970
2010	36	112,119	1,028,089
2011	37	125,734	1,153,823
2012	38	127,921	1,281,744
2013	39	129,840	1,411,584
2014	40	130,827	1,542,411
2015	41	131,782	1,674,193
2016	42	134,510	1,808,703
2017	43	137,348	1,946,051
2018	44	139,971	2,086,022
2019	45	142,771	$2,228,793

ANGELA HOUTZ $2,228,793

SMITH ECONOMICS GROUP, LTD. 312/943-1551

Table 14

PRESENT VALUE OF FUTURE LVL OF ANGELA
2020 - 2056

YEAR	AGE	LVL	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	********	********	**********	**********
2020	46	$145,626	0.98765	$143,828	$143,828
2021	47	145,626	0.97546	142,052	285,880
2022	48	145,626	0.96342	140,299	426,179
2023	49	145,626	0.95152	138,566	564,745
2024	50	145,626	0.93978	136,856	701,601
2025	51	145,626	0.92817	135,166	836,767
2026	52	145,626	0.91672	133,498	970,265
2027	53	145,626	0.90540	131,850	1,102,115
2028	54	145,626	0.89422	130,222	1,232,337
2029	55	145,626	0.88318	128,614	1,360,951
2030	56	145,626	0.87228	127,027	1,487,978
2031	57	145,626	0.86151	125,458	1,613,436
2032	58	145,626	0.85087	123,909	1,737,345
2033	59	145,626	0.84037	122,380	1,859,725
2034	60	145,626	0.82999	120,868	1,980,593
2035	61	145,626	0.81975	119,377	2,099,970
2036	62	145,626	0.80963	117,903	2,217,873
2037	63	145,626	0.79963	116,447	2,334,320
2038	64	145,626	0.78976	115,010	2,449,330
2039	65	145,626	0.78001	113,590	2,562,920
2040	66	145,626	0.77038	112,187	2,675,107
2041	67	145,626	0.76087	110,802	2,785,909
2042	68	145,626	0.75147	109,434	2,895,343
2043	69	145,626	0.74220	108,084	3,003,427
2044	70	145,626	0.73303	106,748	3,110,175
2045	71	145,626	0.72398	105,430	3,215,605
2046	72	145,626	0.71505	104,130	3,319,735
2047	73	145,626	0.70622	102,844	3,422,579
2048	74	145,626	0.69750	101,574	3,524,153
2049	75	145,626	0.68889	100,320	3,624,473
2050	76	145,626	0.68038	99,081	3,723,554
2051	77	145,626	0.67198	97,858	3,821,412
2052	78	145,626	0.66369	96,651	3,918,063
2053	79	145,626	0.65549	95,456	4,013,519
2054	80	145,626	0.64740	94,278	4,107,797
2055	81	145,626	0.63941	93,115	4,200,912
2056	82	113,309	0.63325	71,753	$4,272,665

ANGELA HOUTZ $4,272,665

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 15

PRESENT VALUE OF NET LVL OF ANGELA
2001 - 2056

YEAR	AGE	LVL	CUMULATE
****	***	**********	**********
2001	27	$29,936	$29,936
2002	28	100,782	130,718
2003	29	102,677	233,395
2004	30	106,024	339,419
2005	31	109,650	449,069
2006	32	112,436	561,505
2007	33	117,023	678,528
2008	34	117,128	795,656
2009	35	120,314	915,970
2010	36	112,119	1,028,089
2011	37	125,734	1,153,823
2012	38	127,921	1,281,744
2013	39	129,840	1,411,584
2014	40	130,827	1,542,411
2015	41	131,782	1,674,193
2016	42	134,510	1,808,703
2017	43	137,348	1,946,051
2018	44	139,971	2,086,022
2019	45	142,771	2,228,793
2020	46	143,828	2,372,621
2021	47	142,052	2,514,673
2022	48	140,299	2,654,972
2023	49	138,566	2,793,538
2024	50	136,856	2,930,394
2025	51	135,166	3,065,560
2026	52	133,498	3,199,058
2027	53	131,850	3,330,908
2028	54	130,222	3,461,130
2029	55	128,614	3,589,744
2030	56	127,027	3,716,771
2031	57	125,458	3,842,229
2032	58	123,909	3,966,138
2033	59	122,380	4,088,518
2034	60	120,868	4,209,386
2035	61	119,377	4,328,763
2036	62	117,903	4,446,666
2037	63	116,447	4,563,113
2038	64	115,010	4,678,123
2039	65	113,590	4,791,713
2040	66	112,187	4,903,900
2041	67	110,802	5,014,702
2042	68	109,434	5,124,136
2043	69	108,084	5,232,220
2044	70	106,748	5,338,968
2045	71	105,430	5,444,398
2046	72	104,130	5,548,528
2047	73	102,844	5,651,372
2048	74	101,574	5,752,946
2049	75	100,320	5,853,266
2050	76	99,081	5,952,347

SMITH ECONOMICS GROUP, LTD.   312/943-1551

Table 15 (Cont.)

PRESENT VALUE OF NET LVL OF ANGELA
2001 - 2056

YEAR	AGE	LVL	CUMULATE
****	***	**********	**********
2051	77	97,858	6,050,205
2052	78	96,651	6,146,856
2053	79	95,456	6,242,312
2054	80	94,278	6,336,590
2055	81	93,115	6,429,705
2056	82	71,753	$6,501,458

ANGELA HOUTZ $6,501,458

SMITH ECONOMICS GROUP, LTD. 312/943-1551